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Patent claims

1. A process for producing plastic panels (20), preferably from thermoplastic material, which are provided on at least one side with undercut attachments (28) formed integrally with them, the plastic being shaped by extruding from a flat die (2) and subsequently passed through at least one roll nip formed by two rolls (10, 11, 12), and at least one roll (11) being provided with molds (27) which correspond to the undercut attachments and are filled with the polymer, wherein the molds (27) are provided in molding/demolding strips (13) which are arranged over the circumference of at least one roll (11) and, once the attachments (28) have left the roll nip, are moved radially outward for the nondestructive release of the formed undercut attachments (28) of the plastic panel.
2. The process as claimed in claim 1, wherein the molding/demolding strips (13) are moved radially outward.
3. The process as claimed in claim 1 or 2, wherein the radially outwardly moved molding/demolding strips (13) are moved back into their starting position after demolding of the attachments (28) produced in them.
4. The process as claimed in at least one of claims 1 to 3, wherein the molds (37) are arranged approximately half and half in molding/demolding strips (13) adjacent to each other.
5. The process as claimed in at least one of claims 1 to 4, wherein the plastic panel (20) is extruded in one or more layers.

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6. The process as claimed in claim 5, wherein the plastic panel (20) is co-extruded with substrates, such as metal plates, woven or nonwoven fabrics.
- 5 7. A modification of the process as claimed in any of claims 1 to 6, wherein the molding/demolding strips (13) are provided movably on a substantially planar surface of a temperature-controlled plate, and interact with a
10 corresponding countersurface, the polymer being arranged and melted between the plate and countersurface.
- 15 8. An apparatus for producing plastic panels (20), preferably from thermoplastic material, which are provided on at least one side with undercut attachments (28) formed integrally with them, with an extruder (1) and a flat die (2), through which the melted polymer can be fed to a roll nip formed
20 by two rolls (10, 11, 12), at least one of the rolls (11) being provided with molds (27) which correspond to the undercut attachments (28), wherein the molds (27) are provided in molding/demolding strips (13) which are arranged
25 over the circumference of at least one roll (11) and are designed such that, once the attachments (28) have left the roll nip, they can be moved for the nondestructive release of the formed undercut attachments (28) of the plastic panel (20).
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9. The apparatus as claimed in claim 8, wherein the molding/demolding strips (13) are mounted such that they can be moved radially outward.
- 35 10. The apparatus as claimed in claim 8 or 9, wherein the molds (27) are provided approximately half and half in molding/demolding strips (13) adjacent to each other.

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11. The apparatus as claimed in at least one of claims 8 to 10, wherein the molding/demolding strips (13) can be radially moved hydraulically or pneumatically by means of piston/cylinder arrangements (16) arranged in the rolls (10, 11, 12).

12. The apparatus as claimed in at least one of claims 8 to 11, wherein a roll shell (17) of the rolls (10, 11, 12) is designed - in cross section - as a polygon with planar faces (25), and wherein the molding/demolding strips (13) in the state of rest bear against the faces (25) via corresponding planar supporting surfaces (26).

13. The apparatus as claimed in at least one of claims 8 to 12, wherein the molds (27) recessed into the molding/demolding strips (13) are designed as discrete inverted cones or pyramids.

14. The apparatus as claimed in claim 13, wherein the cone- or pyramid-shaped molds are provided as strip-shaped recesses arranged transversely to the direction of production of the plastic panel (20).

15. The apparatus as claimed in at least one of claims 8 to 14, wherein web profiles arranged transversely to the direction of production of the plastic panel (20) are formed.

16. A modification of the apparatus as claimed in claims 8 to 15, wherein, for the intermittent production of individual plastic panels, the molding/demolding strips (13) are provided on a planar plate, which interacts with a planar countersurface, the polymer being provided, in particular as granules, between the plate and countersurface, where it is able to melt.

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17. A plastic panel (20) with integrally provided, undercut attachments, produced by the process as claimed in at least one of claims 1 to 7.
 - 5 18. A plastic panel (20) with integrally provided, undercut attachments, produced on the apparatus as claimed in at least one of claims 8 to 16.
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